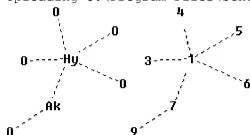


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chain nodes :

1 3 4 5 6 7 9

chain bonds :

1-3 1-4 1-5 1-6 1-7 7-9

exact/norm bonds :

1-3 1-4 1-5 1-6 1-7 7-9

Connectivity :

7:2 E exact RC ring/chain

Match level :

1:Atom 3:CLASS 4:CLASS 5:CLASS 6:CLASS 7:CLASS 9:CLASS

Generic attributes :

1:

Saturation : Saturated

Number of Carbon Atoms : 7 or more

Number of Hetero Atoms : Exactly 1

Type of Ring System : Polycyclic

7:

Saturation : Saturated

Element Count :

Node 1: Limited

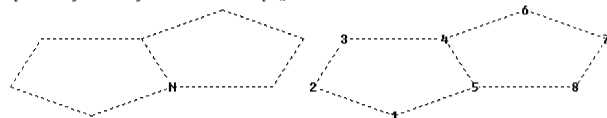
C,C7

N,N1

L1 STRUCTURE UPLOADED

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ring nodes :

1 2 3 4 5 6 7 8

ring bonds :

1-2 1-5 2-3 3-4 4-5 4-6 5-8 6-7 7-8

exact/norm bonds :

1-2 1-5 2-3 3-4 4-5 4-6 5-8 6-7 7-8

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom

L2 STRUCTURE UPLOADED

=> d his

FILE 'REGISTRY' ENTERED AT 19:13:47 ON 09 SEP 2010

L1 STRUCTURE UPLOADED  
L2 STRUCTURE UPLOADED  
L4 36837 S L2 SSS FULL  
L5 82 S L1 SSS FULL SUB=L4

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L6 55 S L5  
L7 1 S US2001-543014/APPS  
L8 1 S L6 AND L7  
L9 54 S L6 NOT L7

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=> d l1

L1 HAS NO ANSWERS  
L1 STR



=> d l2

L2 HAS NO ANSWERS  
L2 STR



=> fil caplus

=> d l8 bib abs

✓<sub>L8</sub> ANSWER 1 OF 1 CAPLUS COPYRIGHT 2010 ACS on STN  
IN Watson, Alison Ann; Nash, Robert James; Evinson, Emma Louisa  
PA Molecularnature Limited, UK

	PATENT NO.	KIND	DATE	✓ APPLICATION NO.	DATE
PI	WO 2004064715	A2	20040805	WO 2004-GB198	20040121
	WO 2004064715	A3	20041223		

AU 2004206085	A1	20040805	AU 2004-206085	20040121
CA 2513881	A1	20040805	CA 2004-2513881	20040121
EP 1587480	A2	20051026	EP 2004-703841	20040121
CN 1761666	A	20060419	CN 2004-80007408	20040121
JP 2006515357	T	20060525	JP 2006-500223	20040121
NZ 541839	A	20090228	NZ 2004-541839	20040121
IN 2005DN03195	A	20070413	IN 2005-DN3195	20050719
US 20070155814	A1	20070705	US 2006-543014	20060815 <--
PRAI GB 2003-1554	A	20030123		
WO 2004-GB198	A	20040121		

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√L9 ANSWER 1 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

PA	Summit Corporation PLC, UK	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2010049678	A2	20100506	WO 2009-GB2554	√20091027	
	WO 2010049678	A3	20100826			
PRAI	GB 2008-19941	A	20081031			
	GB 2009-6161	A	20090409			
	GB 2009-8702	A	20090520			
	GB 2009-14471	A	20090819			

√L9 ANSWER 2 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

SO Chemical Communications (Cambridge, United Kingdom) (2010), 46(15),

√L9 ANSWER 3 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

PA	Summit Corporation Plc., UK; Tinsley, Jonathan Mark; Roach, Alan Geoffrey	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2010029313	A1	20100318	WO 2009-GB2190	√20090910	
PRAI	GB 2008-16600	A	20080911			
	GB 2008-16602	A	20080911			
	GB 2008-19528	A	20081024			
	GB 2008-19533	A	20081024			
	GB 2009-6206	A	20090409			
	GB 2009-6209	A	20090409			
	GB 2009-8677	A	20090520			
	GB 2009-8697	A	20090520			
	GB 2009-14473	A	20090819			
	GB 2009-14474	A	20090819			

√L9 ANSWER 4 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

PA	Summit Corporation PLC, UK	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2010015815	A2	20100211	WO 2009-GB1917	√20090804	
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PRAI	GB 2008-14216	A	20080805			
	GB 2008-17437	A	20080924			
	GB 2008-19518	A	20081024			
	GB 2009-6210	A	20090409			
	GB 2009-8672	A	20090520			

✓L9 ANSWER 5 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
 PA Summit Corporation PLC, UK  
 PATENT NO. KIND DATE APPLICATION NO. DATE  
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 PI WO 2010015816 A2 20100211 WO 2009-GB1918 ✓20090804  
 WO 2010015816 A3 20100826  
 PRAI GB 2008-14322 A 20080806  
 GB 2008-17446 A 20080924  
 GB 2008-17859 A 20081001  
 GB 2008-19523 A 20081024  
 GB 2008-19543 A 20081024  
 GB 2009-6175 A 20090409  
 GB 2009-6179 A 20090409  
 GB 2009-8661 A 20090520  
 GB 2009-8666 A 20090520

✓L9 ANSWER 6 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
 SO Journal of Organic Chemistry (2010), 75(3), 815-824

✓L9 ANSWER 7 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
 SO Journal of Natural Products (2009), 72(11), 2058-2060

✓L9 ANSWER 8 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
 PA Biomatrica, Inc., USA  
 PATENT NO. KIND DATE APPLICATION NO. DATE  
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 PI WO 2009038853 A2 20090326 WO 2008-US68628 20080627  
 WO 2009038853 A3 20091015  
 US 20080176209 A1 20080724 US 2007-876667 20071022  
 EP 2074210 A2 20090701 EP 2008-832322 20080627  
 PRAI US 2007-947275P P ✓20070629  
 US 2007-876667 A 20071022  
 US 2004-560829P P 20040408  
 US 2005-102588 A2 20050408  
 US 2005-291267 A2 20051201  
 WO 2006-US45661 A2 20061129  
 WO 2008-US68628 W 20080627

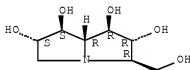
✓L9 ANSWER 9 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
 SO Chemistry--A European Journal (2009), 15(7), 1627-1636

✓L9 ANSWER 10 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
 PA Biomatrica, Inc., USA  
 PATENT NO. KIND DATE APPLICATION NO. DATE  
 -----  
 PI US 20080268514 A1 20081030 US 2008-108360 20080423  
 AU 2008275508 A1 20090115 AU 2008-275508 20080423  
 CA 2684959 A1 20090115 CA 2008-2684959 20080423  
 WO 2009009210 A2 20090115 WO 2008-US61332 20080423  
 WO 2009009210 A3 20090924  
 EP 2118264 A2 20091118 EP 2008-826300 20080423  
 KR 2010015889 A 20100212 KR 2009-722292 20080423

JP 2010524505	T	20100722	JP 2010-506462	20080423
IN 2009CN06415	A	20100611	IN 2009-CN6415	20091029
CN 101688170	A	20100331	CN 2008-80021555	20091223
PRAI US 2007-913781P	P	√20070424		
WO 2008-US61332	W	20080423		

√L9 ANSWER 11 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
 SO Chemistry in Australia (2008), 75(8), 13-14

L9 ANSWER 12 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
 SO e-EROS Encyclopedia of Reagents for Organic Synthesis (2001), No pp. given  
 RN 159440-57-0 CAPLUS  
 CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-,  
 (1R,2R,3R,6S,7S,7aR)- (CA INDEX NAME)



√L9 ANSWER 13 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

PA	Biomatrica, Inc., USA				
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PI	US 20080176209	A1	20080724	US 2007-876667	20071022
	US 20050276728	A1	20051215	US 2005-102588	20050408
	US 20060099567	A1	20060511	US 2005-291267	20051201
	WO 2007075253	A2	20070705	WO 2006-US45661	20061129
	WO 2007075253	A3	20080103		
	WO 2009038853	A2	20090326	WO 2008-US68628	20080627
	WO 2009038853	A3	20091015		
	EP 2074210	A2	20090701	EP 2008-832322	20080627
	US 20080307117	A1	20081211	US 2008-182926	20080730
PRAI	US 2004-560829P	P	√20040408		
	US 2005-102588	A2	20050408		
	US 2005-291267	A2	20051201		
	WO 2006-US45661	A2	20061129		
	US 2007-947275P	P	20070629		
	WO 2005-US12084	A2	20050408		
	US 2007-876667	A	20071022		
	WO 2008-US68628	W	20080627		

√L9 ANSWER 14 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
 SO Organic Letters (2008), 10(13), 2769-2771

√L9 ANSWER 15 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
 SO Tetrahedron (2008), 64(21), 4868-4879

✓L9 ANSWER 16 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
SO Chemistry--A European Journal (2008), 14(10), 3072-3077

✓L9 ANSWER 17 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
PA Institute of Chemistry, Chinese Academy of Sciences, Peop. Rep. China  
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 18pp.  
PATENT NO. KIND DATE APPLICATION NO. DATE  
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PI CN 101153040 A ✓20080402 CN 2006-10113357 20060925  
CN 100567298 C 20091209  
PRAI CN 2006-10113357 20060925

✓L9 ANSWER 18 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
SO Natural Product Communications (2008), 3(1), 41-44

✓L9 ANSWER 19 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
SO Natural Product Communications (2008), 3(1), 31-33

✓L9 ANSWER 20 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
SO Natural Product Reports (2008), 25(1), 139-165

✓L9 ANSWER 21 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
PA Summit Corporation PLC, UK  
PATENT NO. KIND DATE APPLICATION NO. DATE  
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PI WO 2008009894 A2 20080124 WO 2007-GB2597 ✓20070712  
WO 2008009894 A3 20080619  
PRAI GB 2006-14098 A 20060715

✓L9 ANSWER 22 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
SO Journal of Natural Products (2007), 70(6), 993-997

✓L9 ANSWER 23 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
SO Science of Synthesis (2006), 20b, 1065-1089

✓L9 ANSWER 24 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
SO Tetrahedron: Asymmetry (2006), 17(18), 2702-2712

✓L9 ANSWER 25 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
PA MNL Pharma Limited, UK  
PATENT NO. KIND DATE APPLICATION NO. DATE  
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PI WO 2006077427 A2 20060727 WO 2006-GB209 ✓20060120

WO 2006077427	A3	20060914
PRAI GB 2005-1352	A	20050121

✓L9 ANSWER 26 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
 SO Journal of Carbohydrate Chemistry (2006), 25(2-3), 281-295

✓L9 ANSWER 27 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

PA	MNL Pharma Limited, UK	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2006067419	A2	20060629	WO 2005-GB4945	✓20051220	
	WO 2006067419	A3	20070329			
PRAI	GB 2004-27882	A	20041221			

✓L9 ANSWER 28 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

PA	Biomatrica, Inc., USA	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	US 20060099567	A1	20060511	US 2005-291267	20051201	
	WO 2005113147	A2	20051201	WO 2005-US12084	20050408	
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	US 20050276728	A1	20051215	US 2005-102588	20050408	
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	WO 2007075253	A3	20080103			
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	US 20080176209	A1	20080724	US 2007-876667	20071022	
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	KR 2008085003	A	20080922	KR 2008-716123	20080701	
	CN 101360822	A	20090204	CN 2006-80051545	20080722	
	US 20080307117	A1	20081211	US 2008-182926	20080730	
	US 20090291427	A1	20091126	US 2009-509303	20090724	
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	WO 2005-US12084	A2	20050408			
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	WO 2006-US45661	W	20061129			
	US 2007-947275P	P	20070629			

✓L9 ANSWER 29 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
 SO Acta Crystallographica, Section E: Structure Reports Online (2006), E62(3), o928-o930

✓L9 ANSWER 30 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

PA	MNL Pharma Limited, UK	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2006008493	A1	20060126	WO 2005-GB2800	√20050718
PRAI	GB 2004-16419	A	20040723		
	GB 2004-27926	A	20041221		

L9 ANSWER 31 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

PA	M N L Pharma Limited, UK				
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2005070418	A1	20050804	WO 2005-GB215	20050121
	AU 2005205962	A1	20050804	AU 2005-205962	20050121
	AU 2005205962	B2	20100812		
	CA 2553854	A1	20050804	CA 2005-2553854	20050121
	EP 1711176	A1	20061018	EP 2005-701978	20050121
	JP 2007518785	T	20070712	JP 2006-550281	20050121
	US 20090117083	A1	20090507	US 2008-597290	20081230
PRAI	GB 2004-1238	A	√20040121		
	WO 2005-GB215	W	20050121		

L9 ANSWER 32 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

PA	M N L Pharma Limited, UK				
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2005070415	A1	20050804	WO 2005-GB228	20050121
	AU 2005205968	A1	20050804	AU 2005-205968	20050121
	AU 2005205968	B2	20100729		
	CA 2553986	A1	20050804	CA 2005-2553986	20050121
	EP 1711174	A1	20061018	EP 2005-701990	20050121
	EP 1711174	B1	20080319		
	AT 389397	T	20080415	AT 2005-701990	20050121
	US 20090047306	A1	20090219	US 2008-597296	20081007
PRAI	GB 2004-1239	A	20040121		
	WO 2005-GB228	W	20050121		

√L9 ANSWER 33 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
 SO Tetrahedron (2005), 61(27), 6527-6533

L9 ANSWER 34 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

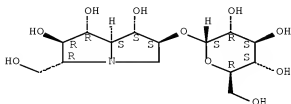
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PI	JP 2005132837	A	20050526	JP 2004-296845	20041008
PRAI	JP 2003-350926	A	20031009		

AB The agents contain metal conjugates of the alkaloids I as  $\alpha$ -glucosidase inhibitors. The agents are manufactured by soaking barks of *Syzygium malaccense* in MeOH, concentrating the MeOH under a vacuum, partitioning the concentrated residue between EtOAc and H<sub>2</sub>O, partitioning the aqueous layer between H<sub>2</sub>O and BuOH, and recovering solid content (called unpurified kavika) from the aqueous layer. Thus, casuarine 6-O- $\alpha$ -glucoside, purified from unpurified kavika, was treated with (AcO)<sub>2</sub>Zn and the mixture inhibited  $\alpha$ -glucosidase at IC<sub>50</sub> value 5.7  $\mu$ g/mL. Oral administration of unpurified kavika to streptozotocin-induced or spontaneously diabetic rats suppressed increase in blood sugar after sucrose loading. Unpurified kavika had no acute toxicity.



RN 186795-20-0 CAPLUS

CN  $\alpha$ -D-Glucopyranoside, (1S,2S,5R,6R,7R,7aS)-hexahydro-1,6,7-trihydroxy-5-(hydroxymethyl)-1H-pyrrolizin-2-yl (CA INDEX NAME)



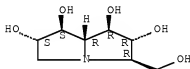
✓L9 ANSWER 35 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

SO Tetrahedron: Asymmetry (2004), 15(22), 3635-3642

✓AB The reaction of N-benzoyloxycarbonyl-L-proline (I) with (methoxycarbonylmethylene)triphenylphosphorane in CH<sub>2</sub>Cl<sub>2</sub> afforded Me (E)-3-[(2'S)-N-benzoyloxycarbonylpyrrolidin-2'-yl]propenoate (II). When the reaction was performed in MeOH, an appreciable amount of the (Z)-isomer was obtained. Both isomers were dihydroxylated to the corresponding 2,3-dihydroxy esters. The stereochem. of the latter compds. could be determined after their transformations into the corresponding 1,2-dihydroxypyrrolizidin-3-ones, e.g. III. Finally, the 1,2-dihydroxypyrrolizidin-3-ones, e.g. III, were reduced to the related pyrrolizidines, e.g. IV.

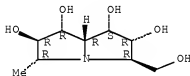
RN 159440-57-0 CAPLUS

CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-, (1R,2R,3R,6S,7S,7aR)- (CA INDEX NAME)



RN 240117-30-0 CAPLUS

CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-5-methyl-, (1S,2R,3R,5R,6R,7R,7aR)-rel-(+)- (CA INDEX NAME)



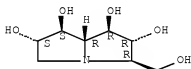
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SO Acta Crystallographica, Section E: Structure Reports Online (2004),

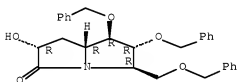
✓AB The title compound [systematic name: (1R,2R,3S,6S,7S,7aR)-3-hydroxymethyl-1,2,6,7-tetrahydroxypyrrolizidine monohydrate or (2S,3R,4R,5R,6S,7S)-2-hydroxymethyl-1-azabicyclo[3.3.0]octan-3,4,6,7-tetrol monohydrate] was formed in a synthetic sequence in which there were several ambiguities in the stereochem. of the reactions. Its crystal structure was determined to resolve these ambiguities. Crystals are tetragonal, space group P41212, with a 7.6230(2), c 33.8174(10) Å; Z = 8, dc = 1.509; R = 0.047, R<sub>w</sub>(F<sub>2</sub>) = 0.072 for 1372 reflections. The structure consists of 3-dimensional H-bonded network.

✓L9 ANSWER 37 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
SO (2003) 459 pp. Avail.: UMI, Order No. DA3091526

✓IT 159440-57-0P, (+)-Casuarine  
RL: MSC (Miscellaneous); SPN (Synthetic preparation); PREP (Preparation)  
(asym. induction in heteroatom-substituted aldehydes and total  
synthesis of (+)-casuarine)  
RN 159440-57-0 CAPLUS  
CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-,  
(1R,2R,3R,6S,7S,7aR)- (CA INDEX NAME)



✓L9 ANSWER 38 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
SO Tetrahedron Letters (2003), 44(11), 2315-2318  
RN 537030-25-4 CAPLUS  
CN 3H-Pyrrolizin-3-one, hexahydro-2-hydroxy-6,7-bis(phenylmethoxy)-5-  
[(phenylmethoxy)methyl]-, (2R,5R,6R,7R,7aR)- (CA INDEX NAME)



✓...

✓L9 ANSWER 39 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
SO Tetrahedron: Asymmetry (2003), 14(3), 325-331  
CODEN: TASYE3; ISSN: 0957-4166  
PB Elsevier Science Ltd.  
DT Journal  
LA English

✓AB The first polyhydroxylated pyrrolizidine alkaloid with a hydroxymethyl group at C-3 was isolated from pods of *Alexa leiopetala* (Leguminosae) and designated alexine 1. The Australian legume *Castanospermum australe* is also known to produce the same structural type of pyrrolizidines. There are reports of the isolation of australine (7 $\alpha$ -epi-alexine) 2, 1-epi-australine 3, 3-epi-australine 4, and 7-epi-australine 5 from this plant to date. Their unambiguous syntheses established that the natural product reported as 5 is 2 and the published NMR data for 2 are those of 3. These confusions prompted us to unambiguously confirm the structures and biol. activities of australine isomers and related alkaloids. A careful search for polyhydroxylated pyrrolizidines in seeds of *C. australe* led to the discovery of three new alkaloids, 2,3-diepi-australine 6, 2,3,7-triepi-australine 7, and the 2-O- $\beta$ -D-glucopyranoside of 3 (8). Herein, we report the full <sup>13</sup>C NMR assignment of alkaloids 1-8 and the glycosidase inhibitory activities of alkaloids 1-8 together with the highly oxygenated pyrrolizidine, casuarine 9, and its 6-O- $\alpha$ -D-glucopyranoside 10.

✓L9 ANSWER 40 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
SO Synlett (2003), (1), 35-38

✓AB Synthesis of (-)-codonopsinine (I) was accomplished in seven steps that involved an addition of five-membered cyclic nitron II readily obtained from L-xylose, with the Grignard reagent. Nitron II also underwent intermol. cycloaddn. with several  $\alpha,\beta$ -unsatd. esters to afford cycloadducts, one of which, III, was elaborated to the key intermediate IV for (+)-hyacinthacines A1 and A2.

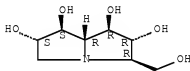
L9 ANSWER 41 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

SO Food Style 21 (2001), 5(2), 69-73

AB A review with refs. on the physiol. effect of nangapiry (Eugenia) which is used in Paraguayan health beverage, covering its blood glucose-inhibitory effect,  $\alpha$ -glucosidase-inhibitory effect, and blood pressure-lowering effect, etc. The active components in nangapiry, i.e. uniflorine A, uniflorine B, and (+)-(3 $\alpha$ ,4 $\alpha$ ,5 $\beta$ )-1-methylpiperidine-3,4,5- triol are also disclosed.

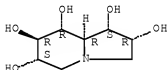
RN 159440-57-0 CAPLUS

CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-,  
(1R,2R,3R,6S,7S,7aR)- (CA INDEX NAME)



RN 260247-75-4 CAPLUS

CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-,  
(1R,2R,3R,6R,7S,7aR)- (CA INDEX NAME)

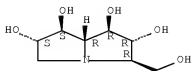


L9 ANSWER 42 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

AB The water-soluble extract from a Paraguayan natural product, Nangapiry (the leaves of *E. uniflora* (Myrtaceae)), which has been used as an antidiabetic, showed inhibitory activities on the increase of plasma glucose levels in the sucrose tolerance test (STT) in mice. The fraction adsorbed on a cation exchange resin also inhibited  $\alpha$ -glucosidases. From the active fraction, 2 new active compds., uniflorine A (I) and B (II) and the known (+)-(3 $\alpha$ ,5 $\beta$ )-1-methylpiperidine-3,4,5-triol were isolated. The structures of I and II were determined as (-)-(1S,2R,6S,7R,8R,8aR)-1,2,6,7,8-pentahydroxyindolizidine and (+)-(1S,2R,5R,7R,8S,8aS)-1,2,5,7,8-pentahydroxyindolizidine by spectral means, resp.

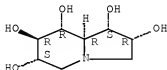
RN 159440-57-0 CAPLUS

CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-,  
(1R,2R,3R,6S,7S,7aR)- (CA INDEX NAME)



RN 260247-75-4 CAPLUS

CN 1H-Pyrrolizidine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-,  
(1R,2R,3R,6R,7S,7aR)- (CA INDEX NAME)



✓L9 ANSWER 43 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

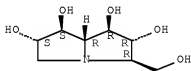
SO (2000) 217 pp. Avail.: UMI, Order No. DA9955629

✓IT 159440-57-0F, (+)-Casuarine

RL: SPN (Synthetic preparation); PREP (Preparation)  
(total synthesis of (-)-detoxinine and (+)-casuarine using tandem  
[4+2]/[3+2] nitroalkene cycloaddns. and cycloaddns. of nitroethylene)

RN 159440-57-0 CAPLUS

CN 1H-Pyrrolizidine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-,  
(1R,2R,3R,6S,7S,7aR)- (CA INDEX NAME)



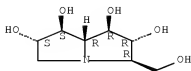
✓L9 ANSWER 44 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

SO Analyst (Cambridge, United Kingdom) (2000), 125(8), 1409-1414

✓AB Atmospheric pressure chemical ionization (APCI) and electrospray (ES) are compared as ion sources in the anal. of polyhydroxyalkaloids (PHAs) by liquid chromatog. mass spectrometry (LC-MS) and collision induced dissociation (CID) product ion spectra, from tandem mass spectrometry (MS-MS) expts. in a quadrupole ion trap, are reported for 12 naturally occurring PHAs. APCI was found to be a more useful source than ES, as APCI could be used to generate deprotonated mol. ions in neg. mode and for some isomeric PHAs the neg. CID product ion spectra were more diagnostic than the pos. product ion spectra. On-column detection limits were also approx. 32 times lower by pos. APCI than ES. The work provides data that will facilitate screening and characterization of this group of important natural products in plant and fungal exts.

RN 159440-57-0 CAPLUS

CN 1H-Pyrrolizidine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-,  
(1R,2R,3R,6S,7S,7aR)- (CA INDEX NAME)



✓L9 ANSWER 45 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

SO Journal of Organic Chemistry (2000), 65(10), 2875-2886

AB The first synthesis of (+)-casuarine (I), a pentahydroxy pyrrolizidine alkaloid of the alexine/australine subclass, is described. The key step is a tandem [4 + 2]/[3 + 2] nitroalkene cycloaddn. involving nitrobenzoate (E-O<sub>2</sub>NCH:CHOBz), chiral vinyl ether II, and vinyl silane III (TDS = SiMe<sub>2</sub>CMe<sub>2</sub>CHMe<sub>2</sub>), which establishes five of the six stereocenters present in this potent glycosidase inhibitor. The completion of the synthesis requires only four addnl. steps to deliver the final product in 20% overall yield. The conformation and stereochem of the cycloaddn. were discussed.

✓L9 ANSWER 46 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

SO Tetrahedron: Asymmetry (2000), 11(1), 1-8

✓AB Four new polyhydroxypyrrolizidines, hyacinthacines A1, A2, A3 and B3 (I), were isolated from the bulbs of *Muscari armeniacum* (Hyacinthaceae) in addition to the known hyacinthacine C1, which was isolated from *Hyacinthoides non-scripta* (Hyacinthaceae). The structures of hyacinthacines A1, A2, A3 and B3 were identified on the basis of extensive NMR studies as (1S,2R,3R,7aR)-1,2-dihydroxy-3-hydroxymethylpyrrolizidine, (1R,2R,3R,7aR)-1,2-dihydroxy-3-hydroxymethylpyrrolizidine, (1R,2R,3R,5R,7aR)-1,2-dihydroxy-3-hydroxymethyl-5-methylpyrrolizidine and (1S,2R,3R,5R,7R,7aR)-3-hydroxymethyl-5-methyl-1,2,7-trihydroxypyrrolizidine, resp., or the corresponding enantiomers. The inhibitory activities of these new hyacinthacines against a variety of glycosidases are described.

L9 ANSWER 47 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

IN Momose, Yasunori

PA Japan

PATENT NO.

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DATE

APPLICATION NO.

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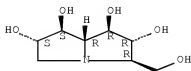
PRAI JP 1998-245307

19980831

AB (-)-(1S,2R,6S,7R,8R,8aR)-1,2,6,7,8-pentahydroxyindolizidine (I) and (+)-(1S,2R,5R,7R,8S,8aS)-1,2,5,7,8-pentahydroxyindolizidine (II) contained in *E. uniflora* are claimed. Also claimed are  $\alpha$ -glucosidase inhibitors containing exts. or powder of *E. uniflora*, useful for treatment of diabetes, obesity, etc. The exts. may contain  $\geq 1$  selected from I, II, and (+)-(3 $\alpha$ ,4 $\alpha$ ,5 $\beta$ )-1-methylpiperidine-3,4,5-triol (III). Isolation of I, II, and III from a hot water extract of *E. uniflora* and their maltase-inhibiting and sucrase-inhibiting activities were shown. The hot water extract (spray-dried powder) was orally administered to mice together with sucrose to significantly suppressed the increase in blood glucose. Pharmaceutical preps. containing the exts. were also formulated.

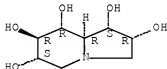
RN 159440-57-0 CAPLUS

CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-, (1R,2R,3R,6S,7S,7aR)- (CA INDEX NAME)



RN 260247-75-4 CAPLUS

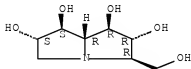
CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-,  
(1R,2R,3R,6R,7S,7aR)- (CA INDEX NAME)



✓L9 ANSWER 48 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
SO Phytochemical Analysis (1999), 10(5), 259-263

✓AB Direct MS anal., utilizing first-order MS and subsequent MS2 and MS3 product ion analyses, is shown to provide a rapid means of characterizing polyhydroxyalkaloid glycosides and aglycons in aqueous methanol plant exts. that have been crudely purified on ion exchange resin. Anal. of species known to synthesize polyhydroxyalkaloids resulted in the discovery of the first diglycosides of these compds. These were detected in *Omphalea diandra* and *Syzygium oleosum*. A monoglycoside was also detected as a minor component in *Castanospermum australe*.

CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-,  
(1R,2R,3R,6S,7S,7aR)- (CA INDEX NAME)

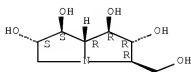


✓L9 ANSWER 49 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN  
SO Organic Letters (1999), 1(8), 1311-1314

✓AB The first synthesis of (+)-casuarine (I), a pentahydroxy pyrrolizidine alkaloid, is described. The key bond-forming events occur in a tandem [4 + 2]/[3 + 2] nitroalkene cycloaddn. involving nitroalkene ((E)-O2NCH=CHOCOPh), chiral vinyl ether (II), and vinyl silane (Z)-PhMe2SiCH=CHCOCH2OCOPh. This process also creates five of the six stereocenters present in this potent glycosidase inhibitor. Completion of the synthesis required only four addnl. steps and delivered (+)-casuarine in 20% overall yield.

RN 159440-57-0 CAPLUS

CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-,  
(1R,2R,3R,6S,7S,7aR)- (CA INDEX NAME)



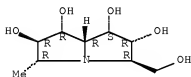
L9 ANSWER 50 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

SO Carbohydrate Research (1999), 316(1-4), 95-103

AB Aqueous ethanol exts. from the immature fruits and stalks of bluebell (*Hyacinthoides non-scripta*) were subjected to various ion-exchange column chromatog. steps to give 1,4-dideoxy-1,4-imino-D-arabinitol (I), 2(R),5(R)-bis(hydroxymethyl)-3(R),4(R)-dihydroxypyrrolizidine (DMDP) (II), 6-deoxy-6-C-(2,5-dihydroxyhexyl)-DMDP (III), 2,5-dideoxy-2,5-imino-DL-glycero-D-manno-heptitol (homoDMDP) (IV), homoDMDP-7-O-apioside (V), homoDMDP-7-O-β-D-xylopyranoside (VI), (1S\*,2R\*,3R\*,5R\*,7aR\*)-1,2-dihydroxy-3,5-dihydroxymethylpyrrolizidine (VII), and (1S\*,2R\*,3R\*,5R\*,6R\*,7R\*,7aR\*)-3-hydroxymethyl-5-methyl-1,2,6,7-tetrahydroxypyrrolizidine (VIII). Bulbs of *Scilla campanulata* (*Hyacinthaceae*) yielded (1S\*,2R\*,3R\*,5S\*,7aR\*)-1,2-dihydroxy-3,5-dihydroxy-methylpyrrolizidine (IX) in addition to compds. I-VII. Compds. III, VI, VII, VIII, and IX are new natural products. Compound IV is a potent competitive inhibitor with  $K_i$  values of 1.5  $\mu\text{M}$  for *Caldocellum saccharolyticum* β-glucosidase and 2.2  $\mu\text{M}$  for bovine liver β-galactosidase. The 7-O-β-D-xyloside VI was a stronger competitive inhibitor than IV of *C. saccharolyticum* β-glucosidase and rat intestinal lactase, with  $K_i$  values of 0.06 and 0.07  $\mu\text{M}$ , resp., but a weaker inhibitor of bovine liver β-galactosidase. Furthermore, compound IV is also a competitive inhibitor ( $K_i = 1.8 \mu\text{M}$ ) of porcine kidney trehalase, but 6 was inactive against this enzyme.

RN 240117-30-0 CAPLUS

CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-5-methyl-, (1S,2R,3R,5R,6R,7R,7aR)-rel-(+)- (CA INDEX NAME)



✓L9 ANSWER 51 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

SO Tetrahedron: Asymmetry (1998), 9(14), 2549-2558

✓AB The NMR spectra of a number of naturally occurring alexines (tetrahydroxylated pyrrolizidine alkaloids) are analyzed and the consequences of changes in the configuration on the conformation of these bicyclic systems discussed. Unambiguous syntheses of australine (7-epi-alexine) and of 7,7a-epi-alexine have now unequivocally established the structures of two natural products isolated from *Castanospermum australe* which were insecure due to erroneous NMR data. Chemical shift parameters are unreliable as a method of comparing different samples of identical compds.; however, 1H-1H three bond coupling consts. (3JHH) provide easy direct comparison between samples and allow assignments of both the relative configurations for the ring protons and the conformation of the pyrrolizidine framework.

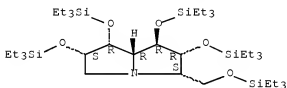
✓L9 ANSWER 52 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

SO Tetrahedron Letters (1997), 38(33), 5869-5872

✓AB The key step in the synthesis of four diastereomers of casuarine from eight carbon sugar lactones is the efficient reduction of open chain azidodimesylates by sodium hydrogen telluride [Suzuki-Takaoka reduction] to allow the formation of the pyrrolizidine nucleus by bicyclization. This is the first report of the synthesis of such highly oxygenated pyrrolizidines.

RN 194918-17-7 CAPLUS

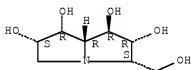
CN 1H-Pyrrolizine, hexahydro-1,2,6,7-tetrakis[(triethylsilyl)oxy]-3-  
[[triethylsilyl]oxymethyl]-, (1R,2R,3S,6S,7R,7aR)- (CA INDEX NAME)



✓...

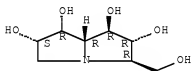
RN 194918-07-5 CAPLUS

CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-,  
(1R,2R,3S,6S,7R,7aR)- (CA INDEX NAME)



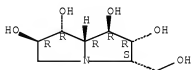
RN 194918-09-7 CAPLUS

CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-,  
(1R,2R,3R,6S,7R,7aR)- (CA INDEX NAME)



RN 194918-11-1 CAPLUS

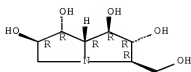
CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-,  
(1R,2R,3S,6R,7R,7aR)- (CA INDEX NAME)



RN 194918-12-2 CAPLUS

CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-,  
(1R,2R,3R,6R,7R,7aR)- (CA INDEX NAME)





L9 ANSWER 53 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

SO Carbohydrate Letters (1996), 2(3), 169-174

AB The isolation, identification and conformational anal. of Casuarine-6- $\alpha$ -D-glucopyranose I from *Casuarina equisetifolia* L. and *Eugenia jambolana* Lam. is reported.

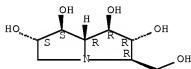
IT 159440-57-0P 186795-20-0P

RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)

(isolation of casuarine-6- $\alpha$ -D-glucoside from *Casuarina equisetifolia* and *Eugenia jambolana*)

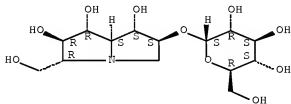
RN 159440-57-0 CAPLUS

CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-, (1R,2R,3R,6S,7S,7aR)- (CA INDEX NAME)



RN 186795-20-0 CAPLUS

CN  $\alpha$ -D-Glucopyranoside, (1S,2S,5R,6R,7R,7aS)-hexahydro-1,6,7-trihydroxy-5-(hydroxymethyl)-1H-pyrrolizin-2-yl (CA INDEX NAME)



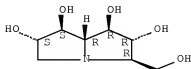
✓L9 ANSWER 54 OF 54 CAPLUS COPYRIGHT 2010 ACS on STN

SO Tetrahedron Letters (1994), 35(42), 7849-52

✓AB The isolation from *Casuarina equisetifolia* bark of casuarine [(1R,2R,3R,6S,7S,7aR)-3-(hydroxymethyl)-2,6,7-tetrahydroxypyrrolizidine] is reported.

RN 159440-57-0 CAPLUS

CN 1H-Pyrrolizine-1,2,6,7-tetrol, hexahydro-3-(hydroxymethyl)-, (1R,2R,3R,6S,7S,7aR)- (CA INDEX NAME)



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SESSION WILL BE HELD FOR 120 MINUTES

STN INTERNATIONAL SESSION SUSPENDED AT 19:16:22 ON 09 SEP 2010